XPi series

the intelligent pump

fixed displacement bent axis design

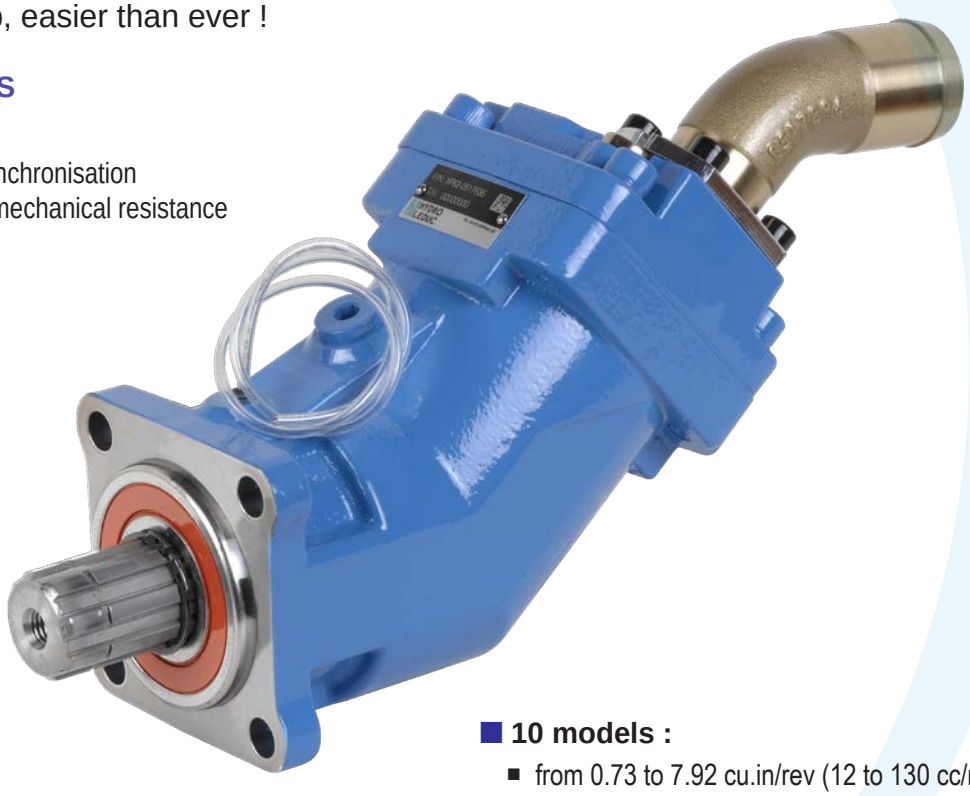
The compact size envelope of XPi pumps, together with their technology, means they can be installed in environments with little space available, and be used at relatively high rotating speeds.

ADVANTAGES

- Pump automatically sets to required direction of rotation
- Mounting and start-up, easier than ever !

CHARACTERISTICS

- 7 pistons
- Innovative plate - barrel synchronisation
- use of materials with high mechanical resistance
- reinforced sealing



10 models :

- from 0.73 to 7.92 cu.in/rev (12 to 130 cc/rev)
- 5511 psi (380 bar) continuous working pressure
- 6092 psi (420 bar) peak pressure
- max. speed from 1750 to 3150 rpm

Pump reference		Displac.	Maximum continuous pressure	Maximum intermittent peak pressure < 5 seconds	Max speed(1)	Max. torque absorbed at 380 bar(2)		Weight				Overhang torque			
								without inlet fitting		with inlet fitting 2"		without inlet fitting		with inlet fitting 2"	
		(cc/rev)	psi (bar)	psi (bar)	(rpm)	lfb ft	(N.m)	lbs	(kg)	lbs	(kg)	lbf ft	(N.m)	lbf ft	(N.m)
XPi 12	0523820	0.73 (12)	5511 (380)	6092 (420)	3150	56	(76)	20.28	(9.2)	21.27	9.65	6.45	(8.74)	6.76	(9.17)
XPi 18	0523810	1.10 (18)	5511 (380)	6092 (420)	2900	84	(114)	20.40	(9.25)	21.38	9.7	6.48	(8.79)	6.79	(9.21)
XPi 25	0523800	1.52 (25)	5511 (380)	6092 (420)	2750	117	(159)	20.50	(9.3)	21.49	9.75	6.52	(8.84)	6.83	(9.26)
XPi 32	0523790	1.95 (32)	5511 (380)	6092 (420)	2700	150	(204)	24.47	(11.1)	25.46	11.55	8.19	(11.1)	8.52	(11.55)
XPi 41	0523780	2.50 (41)	5511 (380)	6092 (420)	2550	192.5	(261)	24.58	(11.15)	25.57	11.6	8.22	(11.15)	8.56	(11.6)
XPi 50	0523770	3.07 (50.3)	5511 (380)	6092 (420)	2450	234	(318)	24.69	(11.2)	25.68	11.65	8.67	(11.76)	9.02	(12.23)
XPi 63	0523760	3.84 (63)	5511 (380)	6092 (420)	2300	296	(401)	24.80	(11.25)	25.79	11.7	8.71	(11.81)	9.06	(12.28)
XPi 80	0523640	4.91 (80.4)	5511 (380)	6092 (420)	2150	375	(509)	32.73	(14.85)	33.73	15.3	13.14	(17.82)	13.54	(18.36)
XPi 108	0523750	6.61 (108.3)	5511 (380)	6092 (420)	1900	507	(687)	32.96	(14.95)	33.95	15.4	13.23	(17.94)	13.63	(18.48)
XPi 130	0523730	7.92 (129.8)	5511 (380)	6092 (420)	1750	640	(827)	33.84	(15.35)	34.83	15.8	13.81	(18.73)	14.22	(19.28)

(1) At absolute pressure 1 bar, ISO VG46 fluid at 77°F (25°C).
(2) Maximum torque given with a mechanical efficiency at 95%.

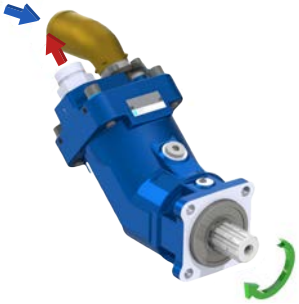
DUAL DIRECTION OF ROTATION:
this *intelligent* pump can operate in either direction of rotation.

Fit the inlet fitting on required side, depending on the direction of rotation of the PTO, and the pump will set itself accordingly.

Inlet

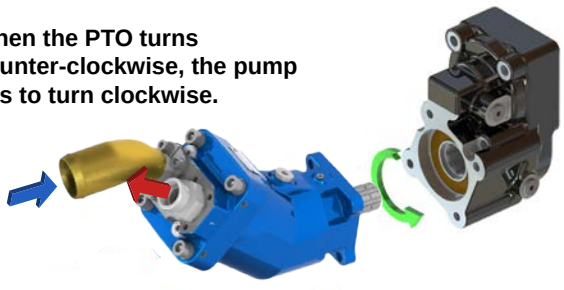
Outlet

Clockwise (CW)

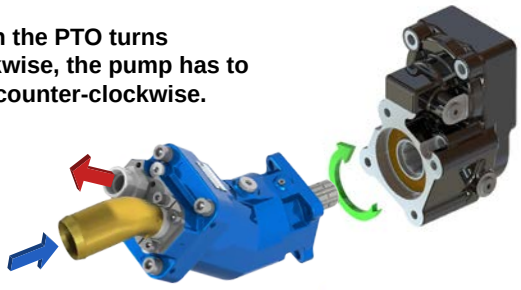


Counter-clockwise (CCW)

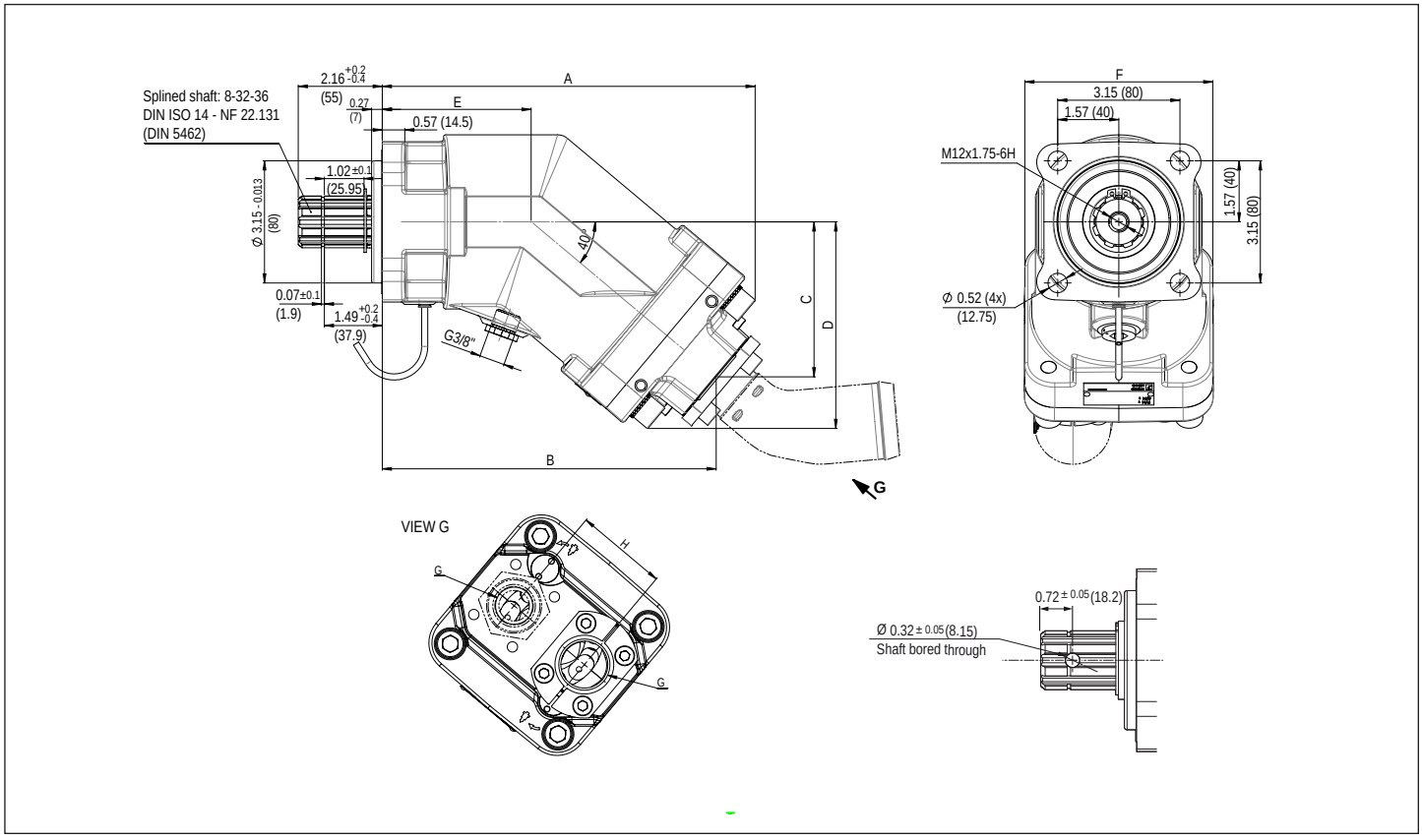
When the PTO turns counter-clockwise, the pump has to turn clockwise.



When the PTO turns clockwise, the pump has to turn counter-clockwise.



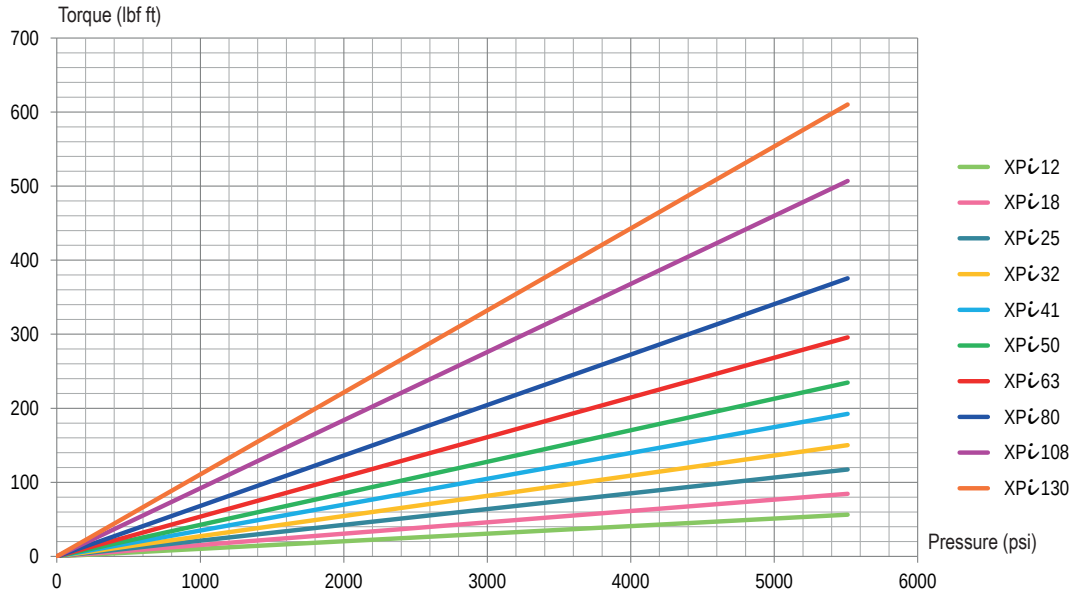
XPi - Dimensions



Pump reference		A		B		C		D		E		F		G	H	
XPi 12	0523820	7.74	(196.7)	7.00	(177.8)	3.04	(77.1)	4.09	(103.9)	3.37	(85.7)	4.25	(108)	G 3/4"	2.13	(54)
XPi 18	0523810	7.74	(196.7)	7.00	(177.8)	3.04	(77.1)	4.09	(103.9)	3.37	(85.7)	4.25	(108)	G 3/4"	2.13	(54)
XPi 25	0523800	7.74	(196.7)	7.00	(177.8)	3.04	(77.1)	4.09	(103.9)	3.37	(85.7)	4.25	(108)	G 3/4"	2.13	(54)
XPi 32	0523790	7.98	(202.8)	7.24	(184)	3.24	(82.3)	4.30	(109.1)	3.37	(85.7)	4.25	(108)	G 3/4"	2.13	(54)
XPi 41	0523780	7.98	(202.8)	7.24	(184)	3.24	(82.3)	4.30	(109.1)	3.37	(85.7)	4.25	(108)	G 3/4"	2.13	(54)
XPi 50	0523770	8.44	(214.4)	7.70	(195.6)	3.62	(92)	4.68	(118.9)	3.37	85.7)	4.25	(108)	G 3/4"	2.13	(54)
XPi 63	0523760	8.44	(214.4)	7.70	(195.6)	3.62	(92)	4.68	(118.9)	3.37	(85.7)	4.25	(108)	G 3/4"	2.13	(54)
XPi 80	0523640	9.52	(241.7)	8.70	(220.9)	4.07	(103.5)	5.25	(133.3)	3.83	(97.4)	4.84	(123)	G 1"	2.36	(60)
XPi 108	0523750	9.52	(241.7)	8.76	(222.5)	4.13	(104.8)	5.25	(133.3)	3.83	(97.4)	4.84	(123)	G 1"	2.36	(60)
XPi 130	0523730	9.61	(244)	8.85	(224.8)	4.20	(106.7)	5.32	(135.2)	3.83	(97.4)	4.84	(123)	G 1"	2.36	(60)

Dimensions in inches (mm).

▶ Torque absorbed as a function of pump output pressure (with a mechanical efficiency considered at 95%)

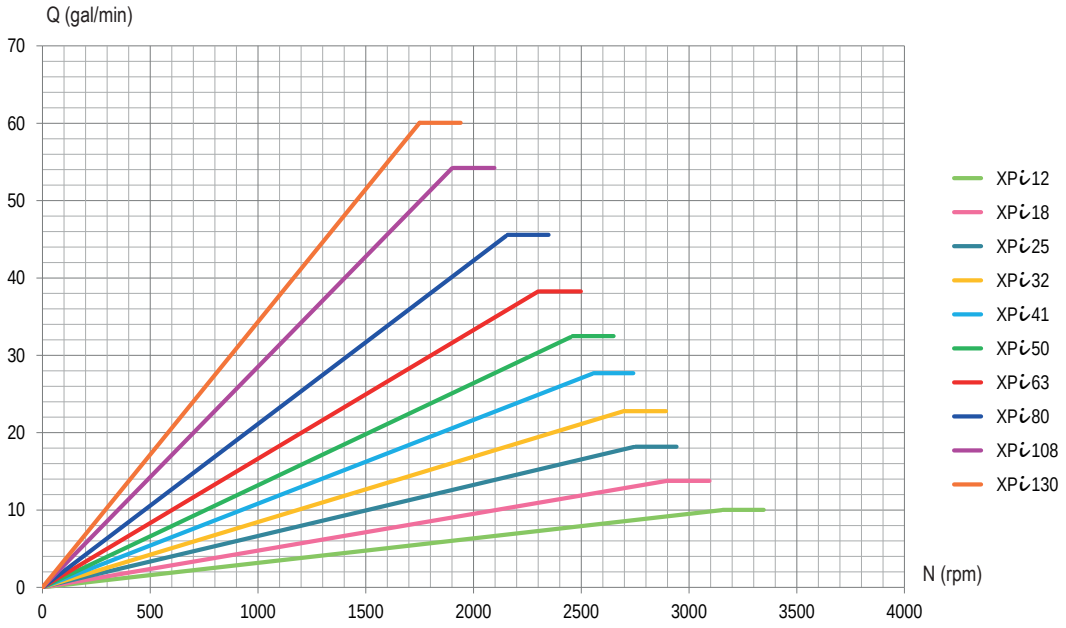


$$C = \frac{Cyl \times \Delta P}{62.8 \times \eta_{meca}}$$

With:

C	=	Torque in lbf ft
Cyl	=	Displacement in cu.in/rev
ΔP	=	Differential pressure in psi
η_{meca}	=	Mechanical efficiency

▶ Flow as a function of rotating speed



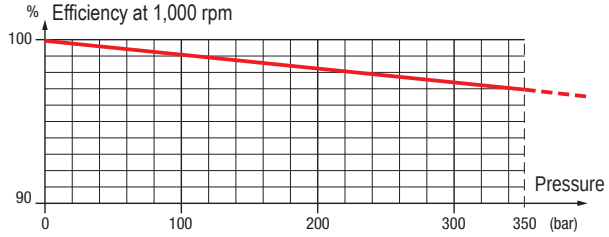
$$Q = \frac{Cyl \times N \times \eta_{vol}}{1000}$$

With:

Q	=	Flow in gal/min
N	=	Speed in rpm
η_{vol}	=	Volumetric efficiency
Cyl	=	Displacement in cu.in/rev

▶ Volumetric efficiency

These graphs are the results of testwork done in HYDRO LEDUC R&D laboratory, on a specific test bench with a mineral hydraulic fluid ISO VG46 at 77°F (25°C) (~100 cSt) - disregarding the volumetric efficiency.

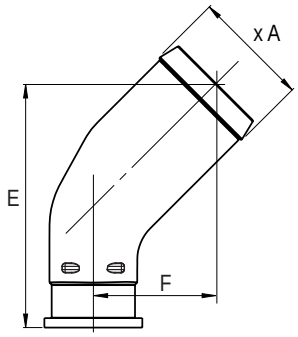


INLET FITTINGS FOR XPi PUMPS

See recommendations of the hosing dimensions on page 42.

For high speeds, please consult.
All XPi pumps are supplied with their inlet fitting.
Please specify required fitting from the choice below when ordering.

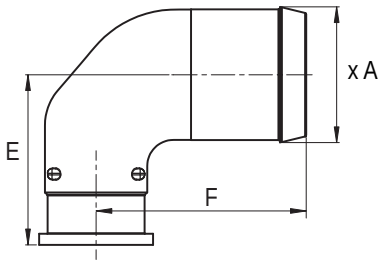
45° elbow fittings kit



Reference	Ø hose	Ø A		E		F	
0519370	1 1/2"	1.54	(39.1)	3.61	(91.7)	1.84	(46.7)
0519373	42	1.69	(43)	3.61	(91.7)	1.84	(46.7)
0519374	1 3/4"	1.81	(46)	3.61	(91.7)	1.84	(46.7)
0519371	2"	2.04	(51.8)	4.27	(108.4)	2.14	(54.4)
0519372	2 1/2"	2.54	(64.5)	4.93	(125.2)	2.45	(62.2)

Dimensions in inches (mm).

90° elbow fittings kit



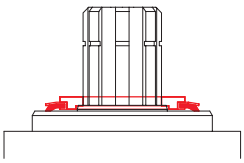
Reference	Ø hose	Ø A		E		F	
0521740	1 1/2"	1.54	(39.1)	2.31	(58.6)	3.13	(79.5)
0521741	2"	2.04	(51.8)	2.56	(64.9)	3.16	(80.2)
0521742	2 1/2"	2.54	(64.5)	2.81	(71.3)	3.44	(87.5)

Dimensions in inches (mm).

DEFLECTOR TO PROTECT SHAFT SEALS

This deflector ensures the protection of the pump shaft seals.
In particular, it protects the pump from projections of dirt from the road in cardan drive installations.

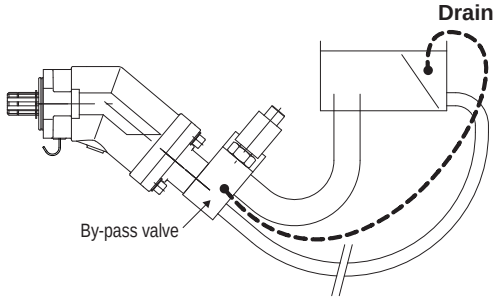
Reference: **DEF 054111**



BY-PASS VALVE FOR XPi PUMPS

For XPi pump applications where the pump is driven by a continuous running PTO (PTO which cannot be disengaged), this solution allows the continuous running of the pump:

- without creating problems of fluid overheating;
- without affecting pump service life;
- with no modifications necessary to the hydraulic circuit of the equipment.



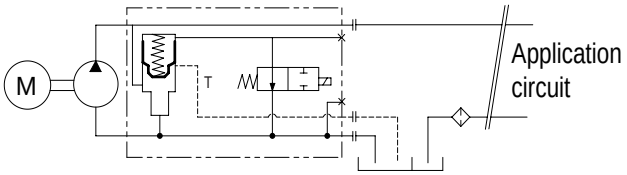
⇨ **By-pass fitted on the back of the XPi pump.**

LEDUC references	24 Volts
XPi 12 to XPi 63	BP63 0517931
XPi 80 to XPi 130	BP80 0522140

► How does it work ?

The by-pass valve is a 24 Volts solenoid valve.

When not activated, it enables pump output to link up to pump inlet.
When it is activated, the pump operates normally (output flow).



A drain line has to be installed between the By-Pass valve and the hydraulic tank of the vehicule to ensure sufficient oil circulation and a good cooling into the pump. In any case, the connection to the tank must be done below the oil level.

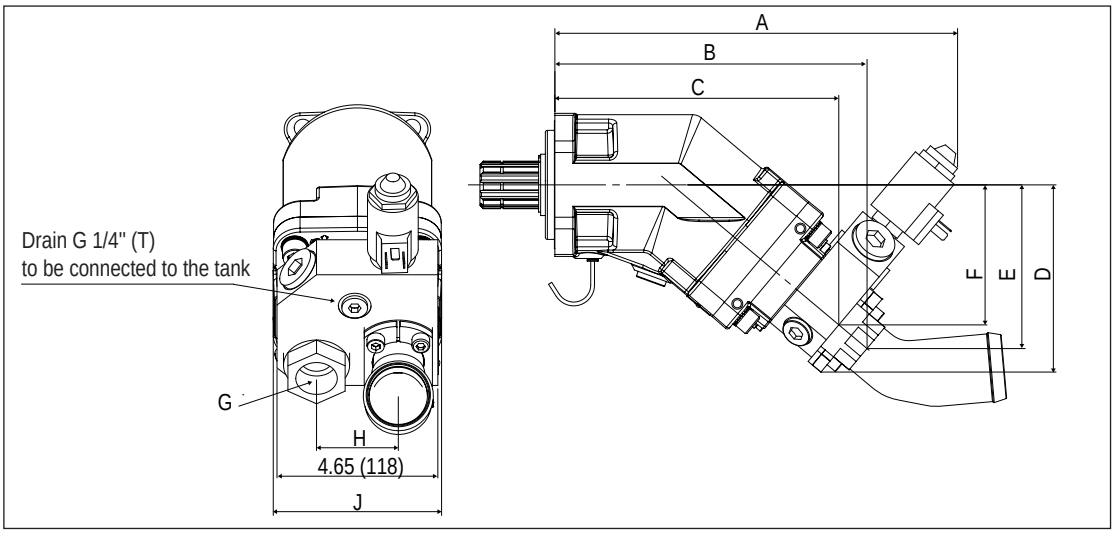
► XPi overhang torque with by-pass

Pump reference	Weight				Overhang torque			
	without inlet fitting		with inlet fitting 2"		without inlet fitting		with inlet fitting 2"	
	lbs	(kg)	lbs	(kg)	lbf ft	(N.m)	lbf ft	(N.m)
XPi 12	28.22	(12.8)	29.21	(13.25)	12.04	(16.32)	12.46	(16.90)
XPi 18	28.33	(12.85)	29.32	(13.30)	12.09	(16.39)	12.51	(16.96)
XPi 25	28.44	(12.9)	29.43	(13.35)	12.13	(16.44)	12.55	(17.02)
XPi 32	32.41	(14.7)	33.40	(15.15)	14.00	(18.98)	14.43	(19.56)
XPi 41	32.52	(14.75)	33.51	(15.20)	14.04	(19.04)	14.47	(19.62)
XPi 50	32.63	(14.8)	33.62	(15.25)	14.79	(20.05)	15.25	(20.67)
XPi 63	32.74	(14.85)	33.73	(15.30)	14.84	(20.12)	15.29	(20.73)
XPi 80	40.68	(18.45)	41.67	(18.90)	20.03	(27.16)	20.52	(27.82)
XPi 108	40.90	(18.55)	41.89	(19.00)	20.14	(27.31)	20.63	(27.97)
XPi 130	41.78	(18.95)	42.77	(19.40)	20.77	(28.16)	21.34	(28.93)

► Dimensions with by-pass valve

Pump reference	A		B		C		D		E		F		G	H		J	
XPi 12 / 18 / 25	11.39	(289.35)	8.78	(223.04)	7.96	(202.19)	5.20	(132.20)	4.52	(114.72)	3.84	(97.58)	3/4"	2.13	(54)	4.25	(108)
XPi 32 / 41	11.63	(295.5)	9.02	(229)	8.20	(208.3)	5.41	(137.3)	4.73	(120.1)	4.04	(102.7)	3/4"	2.13	(54)	4.25	(108)
XPi 50 / 63	12.09	(307.1)	9.46	(240.4)	8.66	(220)	5.79	(147.1)	5.11	(129.7)	4.43	(112.5)	3/4"	2.13	(54)	4.25	(108)
XPi 80 / 108	13.15	(334)	10.59	(269)	9.71	(246.7)	6.21	(157.8)	5.67	(143.9)	4.91	(124.8)	1"	2.36	(60)	4.84	(123)
XPi 130	13.24	(336.3)	10.68	(271.3)	9.80	(249)	6.29	(159.7)	5.74	(145.8)	4.99	(126.7)	1"	2.36	(60)	4.86	(123.5)

Dimensions in inches (mm).



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